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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FREDERIC GARCIA, FREDERIC GRANDIDIER,
BRUNO MIRBACH, ROBERTO ORSELLO, and THOMAS SOLIGNAC

Appeal 2015-002051
Application 13/058,962
Technology Center 2400

Before ERIC S. FRAHM, NATHAN A. ENGELS, and JOHN D.
HAMANN, *Administrative Patent Judges*.

FRAHM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Introduction

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejections of claims 16–20, 22–28, and 30–39. Claims 1–15, 21, 26, and 29 have been canceled. Because claim 26 was canceled by After Final Amendment, only claims 16–20, 22–25, 27, 28, and 30–39 are before us on appeal. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Exemplary Claims

Exemplary independent claim 16 and dependent claim 20 under appeal, with emphases added, read as follows:

16. Position and orientation calibration method for a camera system including a 3D time-of-flight camera, said method comprising:

acquiring a camera-perspective range image of a scene using said 3D time-of-flight camera;

detecting one or more planes within said range image and selecting a reference plane among said one or more planes detected, said selecting of said reference plane comprising presenting said one or more detected planes using a user interface and fixing said reference plane based upon user interaction; and

computing position and orientation parameters of said 3D time-of-flight camera with respect to said reference plane.

20. The method as claimed in claim 19, wherein said selection of said reference plane is effected by said camera based upon and following input of *user-defined limits of at least one of camera roll angle and camera pitch angle with respect to said floor plane.*

The Examiner's Rejection

The Examiner rejected claims 16–20, 22–25, 27, 28, and 30–39 as being unpatentable under 35 U.S.C. § 103(a) over the combination of Rafii

(US 7,741,961 B1; published June 22, 2010 and filed Sept. 28, 2007) and Palm (US 5,699,444; issued Dec. 16, 1997). Final Act. 3–20; Ans. 2–18.

*Principal Issues on Appeal*¹

Based on Appellants' arguments in the Appeal Brief (App. Br. 5–8) and the Reply Brief (Reply Br. 2–7), the following two principal issues are presented on appeal:

(1) Did the Examiner err in rejecting claims 16–19, 22–25, 27, 30–36, 38, and 39 under 35 U.S.C. § 103(a) over the combination of Rafii and Palm because the combination fails to teach or suggest the limitations at issue in representative independent claim 16, namely selecting a reference plane through user interaction?

(2) Did the Examiner err in rejecting claims 20, 28, and 37 under 35 U.S.C. § 103(a) over the combination of Rafii and Palm because the combination fails to teach or suggest the limitations at issue in dependent claims 20, 28, and 37, namely utilizing at least one parameter from amongst the group consisting of camera roll angle and camera pitch angle with reference to a floor plane?

ANALYSIS

We have reviewed the Examiner's rejections (Final Act. 3–20; Ans. 2–18) in light of Appellants' arguments in the Appeal Brief (App. Br. 5–8)

¹ Independent claims 24, 32, 35, and 39 (and claims 17–19, 22, 23, 25, 27, 30, 31, 33, 34, 36, 38, and 39 which depend respectively therefrom) contain the same disputed limitations pertaining to calibration for a 3D time-of-flight camera including selection of a reference plane through user interaction, and are argued together as a group by Appellants in the Appeal Brief (App. Br. 5–7). We select claim 16 as representative of the group of claims 16–19, 22–25, 27, 30–36, 38, and 39.

and the Reply Brief (Reply Br. 2–7) that the Examiner has erred in view of the Advisory Action mailed May 16, 2014 and the Examiner’s Answer including the Examiner’s response to Appellants’ arguments (Ans. 9–26). We disagree with Appellants’ arguments. With respect to representative claim 16, we adopt as our own (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken (Final Act. 4–7), as well as the Advisory Action mailed May 16, 2014, and (2) the reasons set forth by the Examiner in the Examiner’s Answer (Ans. 9–26) in response to Appellants’ Appeal Brief. We concur with the conclusions reached by the Examiner.

We note that each reference cited by the Examiner must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (finding one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references). In this light, Appellants’ arguments as to representative independent claim 16 (App. Br. 5) concerning the individual shortcomings in the teachings of Rafii and Palm are not persuasive, and are not convincing of the non-obviousness of the claimed invention set forth in representative independent claim 16.

The Examiner has relied upon the *combination* of Rafii and Palm as teaching or suggesting the method of calibrating a 3D time-of-flight camera as recited in claim 16. We agree with the Examiner (Ans. 4–6) that Rafii teaches the time-of-flight (*see* col. 1, ll. 23–26 and col. 6, l. 14; *see also* col. 4, ll. 52–55 describing depth analysis using world coordinates) and reference planes (i.e., road planes 230, 230-1, and 230-2 discussed extensively in cols.

6, 7, and 10) features of claim 16. We also agree with the Examiner (Ans. 19–20) that Palm (*see e.g.*, col. 15, ll. 43–46) teaches the user interaction and selection features, as well as using triangles in the calculations (*see* Figs. 3 and 6). Appellants have not shown otherwise. Based on the foregoing, Appellants’ contentions are not persuasive of Examiner error with regard to representative claim 16.

With regard to dependent claims 20, 28, and 37 separately argued, we agree with the Examiner (Ans. 24–26) that the combination of Rafii and Palm teaches or suggests the subject matter recited in these claims. The Examiner finds, and we concur, that (i) at least Rafii’s Figure 8A and columns 6 and 10 teach planes for selection in a time-of-flight camera system, as well as pitch and roll (*see e.g.*, col. 10, ll. 7–21); and (ii) Palm teaches user selection of points under consideration (*see* col. 15, ll. 43–46). Additionally, both Rafii (*see* Figs. 1A, 3, and 4) and Palm (Figs. 3 and 6; col. 5, ll. 18–40) operate on triangles to determine camera orientation. It would have been reasonable in view of the aforementioned findings to select a reference plane according to user-input parameters such as camera roll angle and/or camera pitch angle, as set forth in claims 20, 28, and 37.

In view of the foregoing, we sustain the rejection of claim 16, as well as the respective claims 17–19, 22–25, 27, 30–36, 38, and 39 grouped therewith, under § 103(a) over the combination of Rafii and Palm for the reasons provided by the Examiner (*see e.g.*, Final Act. 4–7; Ans. 2–6 and 19–24)(discussing claim 16).

CONCLUSION OF LAW

The Examiner did not err in rejecting claims 16–20, 22–25, 27, 28, and 30–39 under 35 U.S.C. § 103(a) over the combination of Rafii and Palm because Appellants’ arguments are not persuasive of Examiner error in reaching the conclusion of obviousness as to representative claim 16 and/or dependent claims 20, 28, and 37 separately argued.

DECISION

We affirm the Examiner’s rejections of claims 16–20, 22–25, 27, 28, and 30–39.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. §§ 41.50(f), 41.52(b).

AFFIRMED